REMARKS

Claims 25-58 are pending. Claims 29-32 and 36-58 have been withdrawn from consideration by the Office as being directed to non-elected subject. Claims 25-28 and 33-35 have been examined.

Claim 25 has been amended to recite that "the average foam bubble size is smaller than 10 μm." Support for this amendment can be found in Claim 27.

Claim 27 has been amended to delete the phrase "the average foam bubble size is smaller than 10 μm."

The amendments to the Claims add no new matter. The Office is respectfully requested to enter the amendments to Claims 25 and 27.

REJECTION UNDER 35 U.S.C. § 102(b)

Claims 25, 26, 28, 33, and 34 have been rejected under 35 U.S.C. § 102(b), as allegedly being anticipated by U.S. 5,419,487 issued to Nielsen *et al.* (hereinafter "Nielsen"). Applicants believe the amendment to Claim 25 obviates this rejection.

Nielsen summarizes his disclosure at col. 6, ll. 22-24 as "[i]n its broadest embodiment…to a process for spraying a water-borne polymeric composition having reduced water content." Nielsen utilizes compressed fluids such that "water-borne coating compositions can be sprayed at lower water levels that give improved coating performance and process advantages." (*See* col. 8, ll. 64-67.) The final products produced by Nielsen are not "foamed materials" as recited in Applicants' claims, but are coatings. The compressed gases, *inter alia*, carbon dioxide, ethane, and nitrous oxide, serve to disperse the water-borne coating compositions and are not themselves a part of the resulting films. Nielsen describes the deliverable coatings at col. 10, ll. 33-36 as "a paint, enamel, lacquer, varnish, adhesive, chemical agent, release agent, lubricant, protective oil, an agricultural coating, or the like." There is no description or other disclosure that describes the coatings as "foamed." If the coatings disclosed by Nielsen were intended to be a "foamed" material, then Nielsen has not characterized nor otherwise described the metes and bounds of the resulting foamed material.

Claim 25 now recites that "the average foam bubble size is smaller than 10 μm." Nielsen does not provide any disclosure relating to an "average foam bubble size." Moreover, a fair reading of Nielsen leads the artisan to realize that Nielsen only discloses a method for lowering the amount of water necessary to spray a film forming composition and the characteristics of the spray itself, *i.e.,* droplet size (col. 16, ll. 29-35). Nielsen does not disclose compositions comprising liquefied carbon dioxide, ethane, nitrous oxide, and the like, for the purpose of forming foam materials, but instead, these gases are present because they serve to act as a propellant thereby providing a means for propelling a low-water containing composition onto a surface. For example, Nielsen discloses at col. 16, ll. 11 to 25:

> Reactive systems must generally be sprayed at lower temperatures than non-reactive systems. Preferably, the spray temperature of the liquid mixture is above about 20 °C…The liquid mixture is preferably heated to a temperature that substantially compensates for the cooling effect caused by expansion of the compressed fluid during spray formation, thereby increasing the water evaporation rate from the spray. Heating also lowers the viscosity and increases the rate at which the compressed fluid is released as a gas during depressurization, thereby **increasing the expansive force used for atomization**.

As such, the compressed fluid is not used to form foam bubbles, but instead to create atomized droplets. Nielsen does not create a foamed material, but a spray carried to a surface by expanding gases that leaves a coating upon a surface once the water, solvent, and liquefied gas has evaporated.

Nielsen does not anticipate Claims 25, 26, 28, 33, and 34. Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. § 102(b).

REJECTION UNDER 35 U.S.C. §102(B) OR 35 U.S.C. § 103(a)

The Office Action has rejected Claim 28 under 35 U.S.C. § 102(b), as allegedly anticipated by or alternatively under 35 U.S.C. § 103(a), as allegedly obvious over Nielsen. Applicants respectfully traverse the rejection.

As it relates to the rejection 28 under 35 U.S.C. § 102(b), the Applicants' remarks herein above serve to distinguish Claim 28 from Nielsen. As it relates to the Office Action's rejection

under 35 U.S.C. § 103(a), the Office Action concedes that Nielsen is "silent about the bubble density, bubble size, and the total volume of the foam." The Office Action alleges that "Nielsen's supercritical fluid containing liquid mixture reads on all the features of the claimed invention as set forth above, the resultant features of the foamed material are deemed to be either anticipated, or obviously provided by practicing the invention of prior art." Applicants respectfully disagree.

Nielsen's "supercritical fluid containing liquid mixture" is contained within an apparatus prior to use. Nielsen discloses in Example 1 at col. 22, ll. 23 "[t]he water-borne coating composition was sprayed using carbon dioxide as the compressed fluid." As such, the CO2 is a propellant. Nielsen describes the composition as the liquid carbon dioxide is admixed with the aqueous phase at col. 22, ll. 64-67 "[t]he sight glass showed a relatively small amount of finely disperse liquid carbon dioxide phase in the liquid mixture, which showed that the solubility was less than 5 percent." This is the only disclosure in Nielsen that describes the physical form of the compress liquid within the composition and it is in a container that is under going circulation and mixing prior to the composition being sprayed. Moreover, the Office Action has conceded that Nielsen is silent concerning the parameters Applicants have used to characterize their foamed material. As such, the Office Action has not pointed out where in the disclosure of Nielsen there is any teaching that describes Applicants' foamed material as recited in Claim 28. The Office Action has not met its burden to establish a case of obviousness.

REJECTION UNDER 35 U.S.C. § 103(a)

The Office Action has rejected Claim 35 under 35 U.S.C. § 103(a), as allegedly obvious over Nielsen in view of US 20050163924 (hereinafter "Anderson"). Applicants respectfully traverse the rejection.

The Office Action again concedes "Nielsen is silent about the composition of surfactant as octadethylene glycol mondodecyl ether. However, Anderson's invention relates to various well known functionally equivalent surfactants." Nielsen does not disclose Applicants' recited surfactant, therefore, the Office Action has relied upon Anderson to teach the combination of a

surfactant and the composition recited in Claim 25. In asserting a case of obviousness the Office Action states:

> It would have [been] an obvious substitution to one of ordinary skill in the art to use a well known alternative surfactant such as octaethylene glycol monododecyl ether, because the selection of a known equivalent material based on its suitability for its intended use supported a *prima facie* obviousness determination. See MPEP § 2144.07.

Anderson discloses "surfactant mediated metal oxide (SMM) films of the invention are generally made by coating a SMM precursor composition onto a substrate, evaporating the solvent to form a thin metal oxide-surfactant film, and removing the surfactant." (*See* paragraph [0015].) Anderson cannot be used as a reference because it in no way relates to the subject matter recited in Applicants' claims. The reasons that Anderson would select a surfactant for use in his compositions, is wholly different from the reasons that the Applicants would select a surfactant. Applicants do not remove their surfactant; however, Anderson does. As such, any teaching found in Anderson would relate to selecting a surfactant that can be removed. In addition, the compositions disclosed by Anderson are not foams, they do not comprise a supercritical fluid, and they comprise metal oxides which Applicants' foams do not.

The Office Action has failed to establish a case of obviousness over Claim 35. Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a).

CONCLUSION

Pursuant to the above Remarks, reconsideration and allowance of the pending application is believed to be warranted. The Examiner is invited and encouraged to directly contact the undersigned if such contact may enhance the efficient prosecution of this application to issue.

No fees are believed to be due, however, the Commissioner is authorized to deduct any fees from Deposit Account 14-0629.

Respectfully submitted,

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